

WHAT IS CLAIMED IS:

1. A method of manufacturing a semiconductor device having field effect transistors with gate insulating films of different thicknesses comprising the steps of:

- 5 forming a trench isolation film at a main surface of a silicon substrate to form first and second active areas;
forming a first insulating film on said first and second active areas;
selectively removing a prescribed portion of said first insulating film to expose said second active area;
10 forming a second insulating film on said first and second active areas;
performing an annealing process on said first and second insulating films at or above a temperature for forming said second insulating film; and
forming a first gate electrode on said first active area such that said first and second insulating films undergoing the annealing process lie
15 between said first active area and said first gate electrode, and forming a second gate electrode on said second active area such that said second insulating film undergoing the annealing process lies between said second active area and said second gate electrode.

2. The method of manufacturing a semiconductor device according to claim 1, wherein the temperature for forming said second insulating film is at most 1000°C.

3. The method of manufacturing a semiconductor device according to claim 1, wherein said first insulating film is formed through a thermal oxidization process in a wet atmosphere.

4. The method of manufacturing a semiconductor device according to claim 1, wherein said annealing process is performed with a rapid thermal anneal (RTA) method.

5. The method of manufacturing a semiconductor device according to claim 1, wherein said annealing process is performed in an atmosphere of inert gas.